



LEEDS BECKETT UNIVERSITY  
CARNEGIE SCHOOL OF SPORT



# Assessing and Evaluating Player Performance & Potential: The Influence of Age

**Prof. Kevin Till**

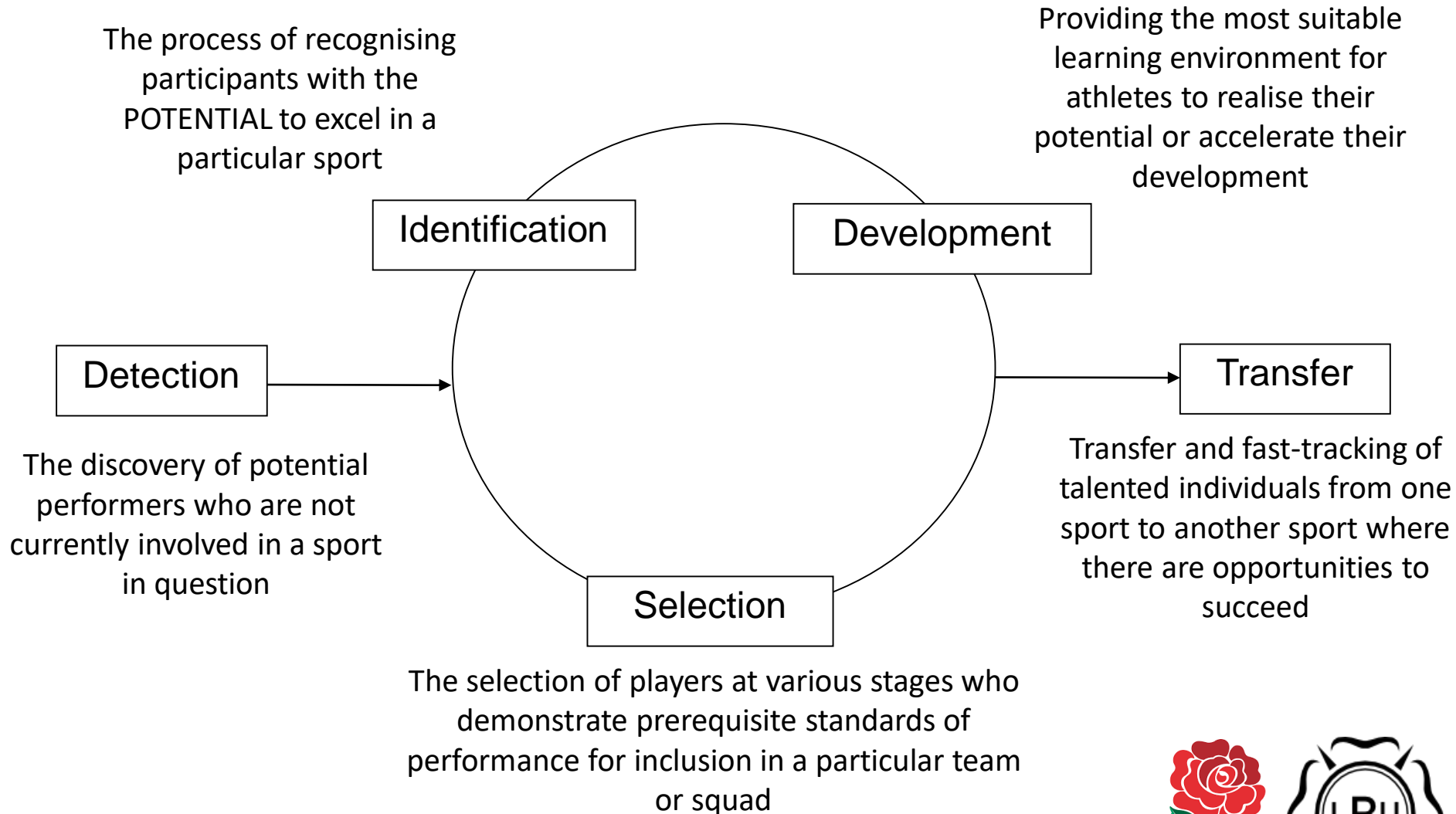
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# Learning Outcomes

This workshop will allow coaches (within Youth & School, Player Development and Player Performance settings) to...

1. Understand the different types of age that may impact upon player performance and potential
2. Consider how age may impact upon talent identification and development within rugby union
3. Start to develop interventions and strategies to support player identification and player development

# Talent ID & Development Processes



# How do we decide WHO gets these opportunities?

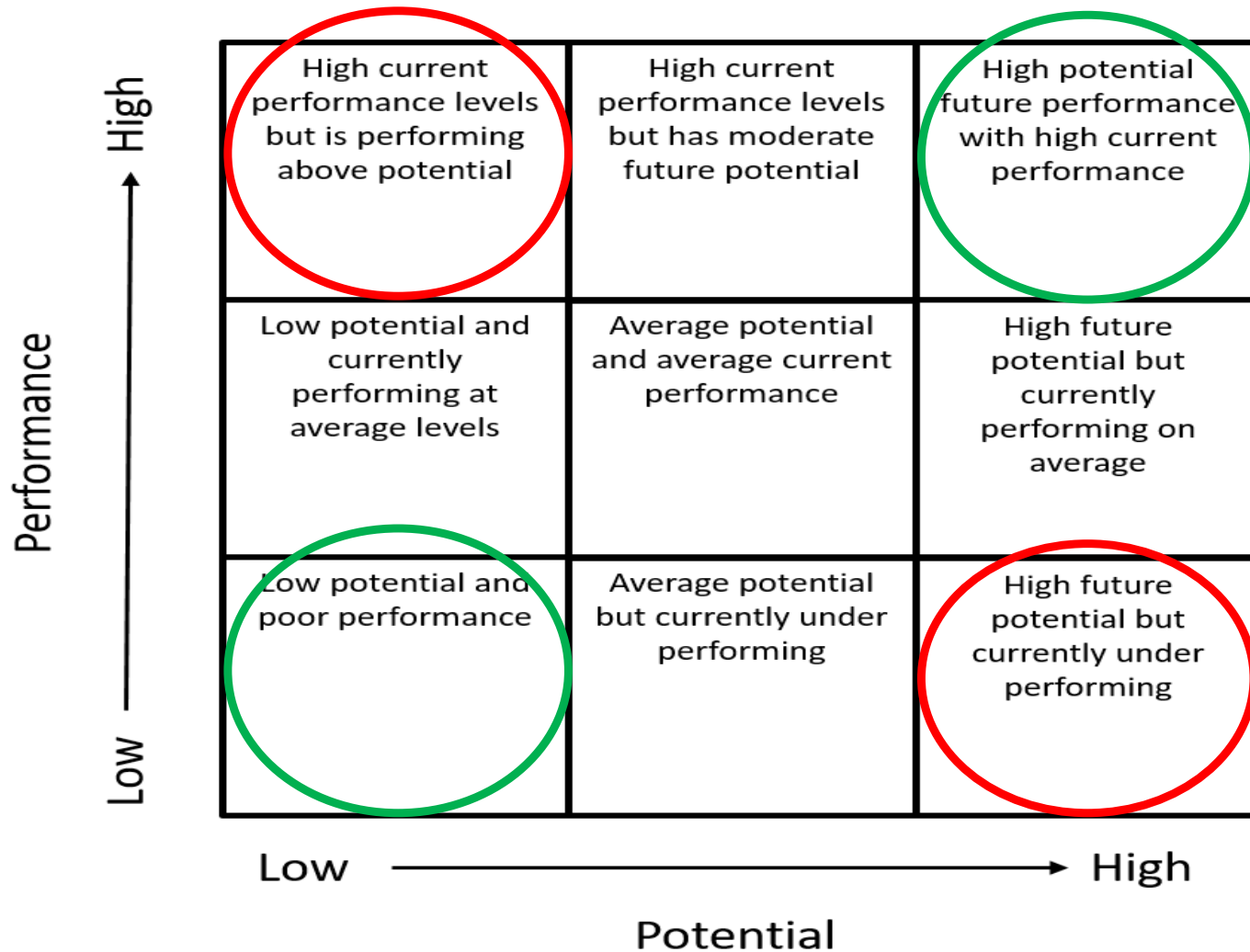
## How do we Identify Talent?

- 1) If you were asked to identify a talented athlete from the players you coach – who would you pick? and Why?
- 2) In Rugby – How is talent typically identified and selected?
- 3) What are the biggest challenges in terms of identifying talent in your role?

WHAT  
DO  
YOU  
THiNK?



# Performance vs. Potential



# **What Types of Age may Impact upon Player Performance and Potential (and how we perceive these)?**



# 1. Chronological Age

- Time frame of number of days from date of birth to a specific date (Today)
- $= (\text{Current Date} - \text{Date of Birth}) / 365$
- 03/02/2019 – 03/10/1982

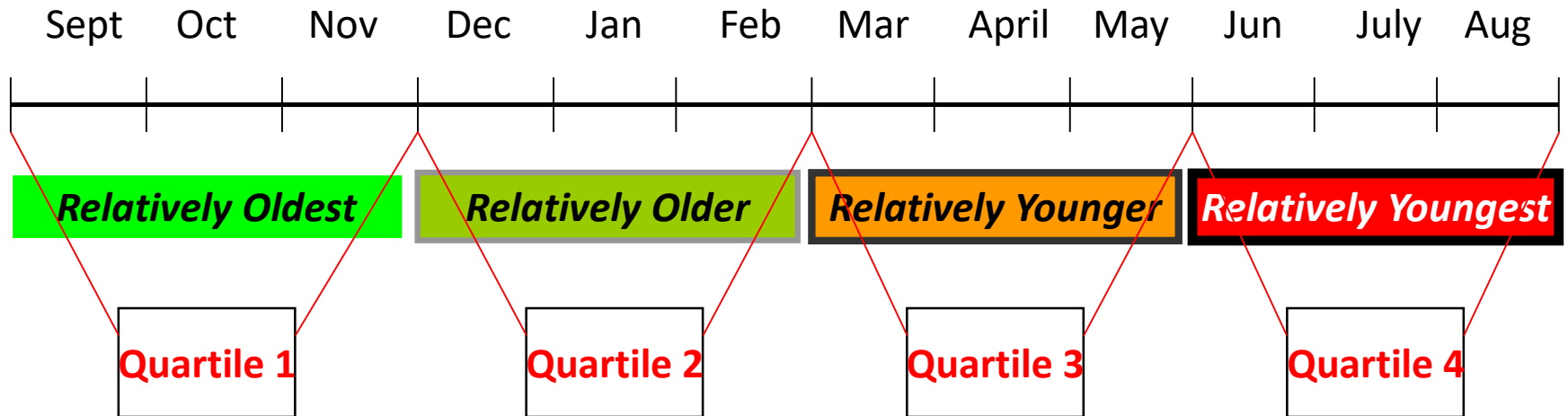
**= 13,272 days**

**= 36.4 years**



# 2. Relative Age

Annual-age grouping policy (e.g., UK)



*Relative Age = Potential differences in an age within an annual cohort.*



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# 3. Biological or Maturation Age



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# 4. Cognitive Age

## Stages of Development According to Erik Erikson

Approximate Age	Developmental Task or Conflict to Be Resolved
Birth to 1 year	<i>Trust vs. mistrust:</i> Babies learn either to trust or to mistrust that others will care for their basic needs, including nourishment, sucking, warmth, cleanliness, and physical contact.
1 to 3 years	<i>Autonomy vs. shame and doubt:</i> Children learn either to be self-sufficient in many activities, including toileting, feeding, walking, and talking, or to doubt their own abilities.
3 to 6 years	<i>Initiative vs. guilt:</i> Children want to undertake many adultlike activities, sometimes overstepping the limits set by parents and feeling guilty.
7 to 11 years	<i>Industry vs. inferiority:</i> Children busily learn to be competent and productive or feel inferior and unable to do anything well.
Adolescence	<i>Identity vs. role confusion:</i> Adolescents try to figure out, "Who am I?" They establish sexual, ethnic, and career identities, or are confused about what future roles to play.
Young adulthood	<i>Intimacy vs. isolation:</i> Young adults seek companionship and love with another person or become isolated from others.
Adulthood	<i>Generativity vs. stagnation:</i> Middle-age adults are productive, performing meaningful work and raising a family, or become stagnant and inactive.
Maturity	<i>Integrity vs. despair:</i> Older adults try to make sense out of their lives, either seeing life as a meaningful whole or despairing at goals never reached and questions never answered.

# 5. Training Age

Defined as the number of years an athlete has been participating in formalized training (Lloyd & Oliver, 2012)



# Hypothetical Comparison

	Player 1	Player 2
Chronological Age	14	14
Relative Age	Q4	Q1
Biological Age	12	16
Cognitive Age	15	13
Training Age	5	1

**(What things may we see in these players? Why?)**

# How Do These Types of Age Impact Upon Talent ID and Development within Rugby?

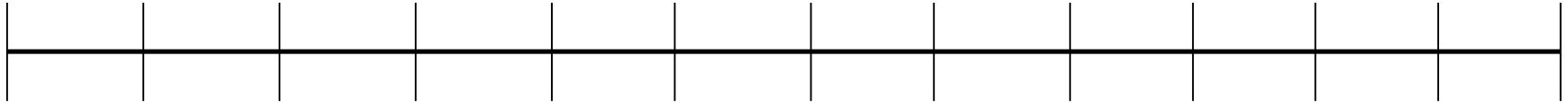


# The Relative Age Effect



Annual-age grouping policy (e.g., UK)

Sept Oct Nov Dec Jan Feb Mar April May Jun July Aug



*Relatively Oldest*

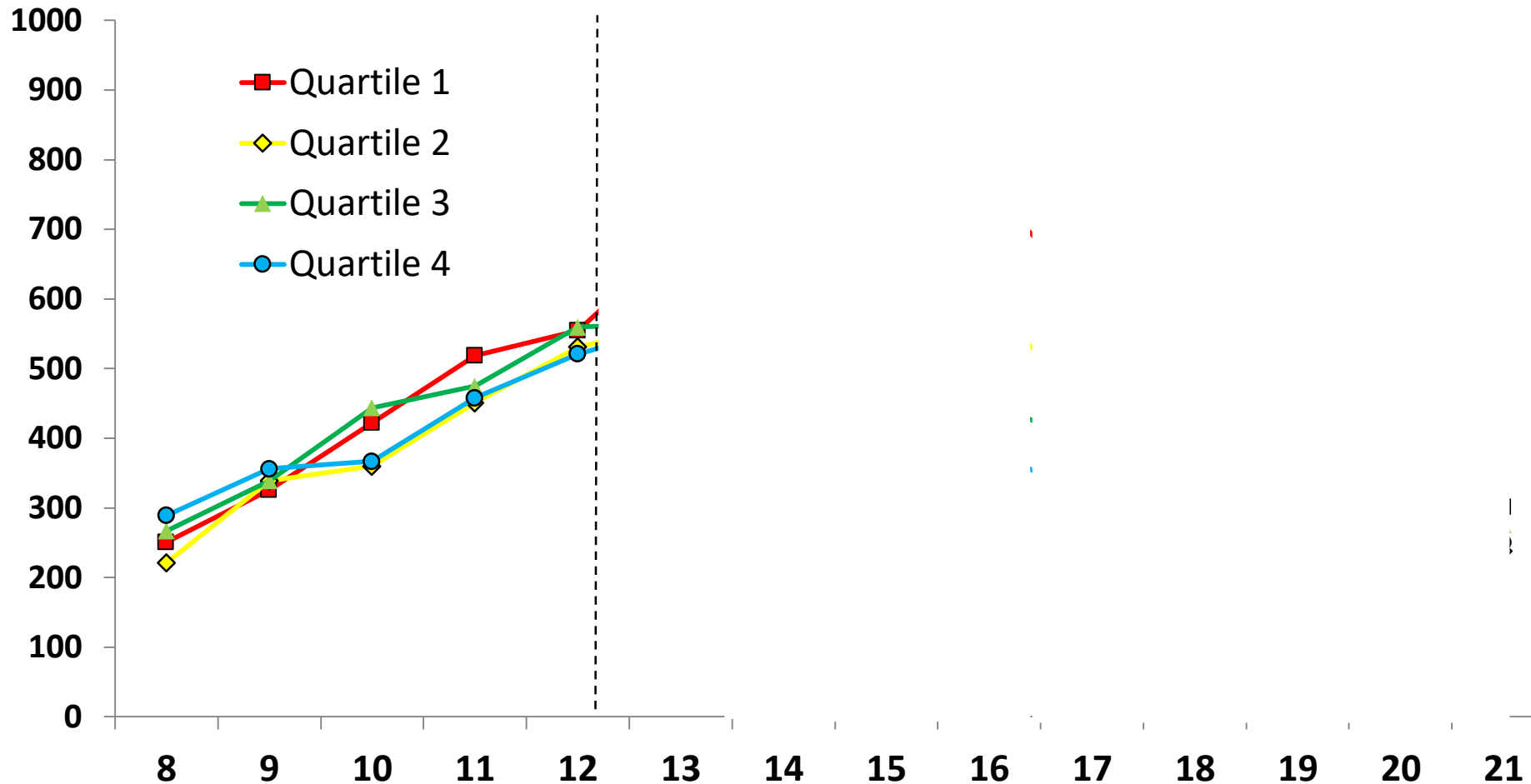
*Relatively Youngest*

*‘The immediate and long-term consequences that effect participation and selection in youth sport’*

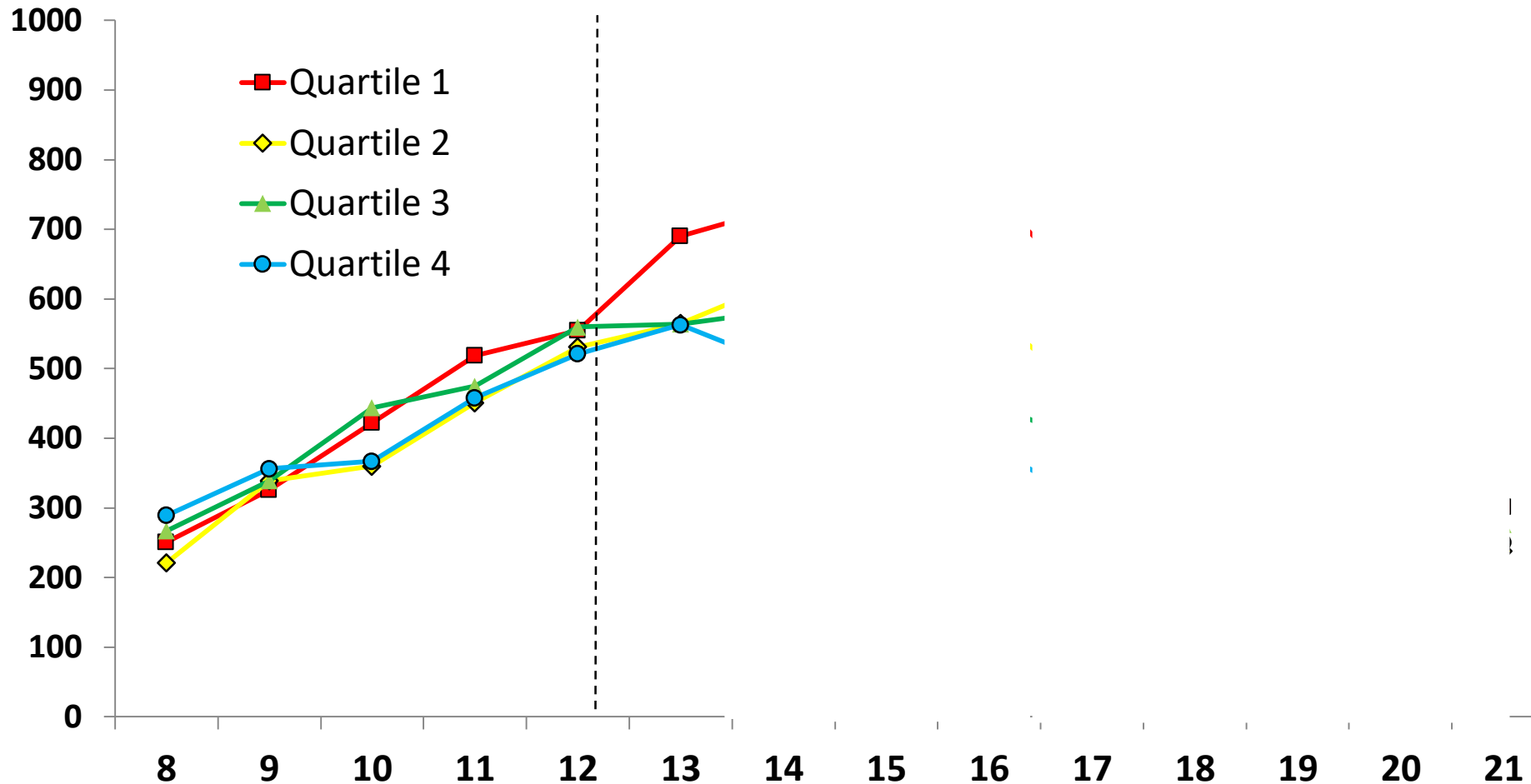


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# The Relative Age Effect: RL Participation

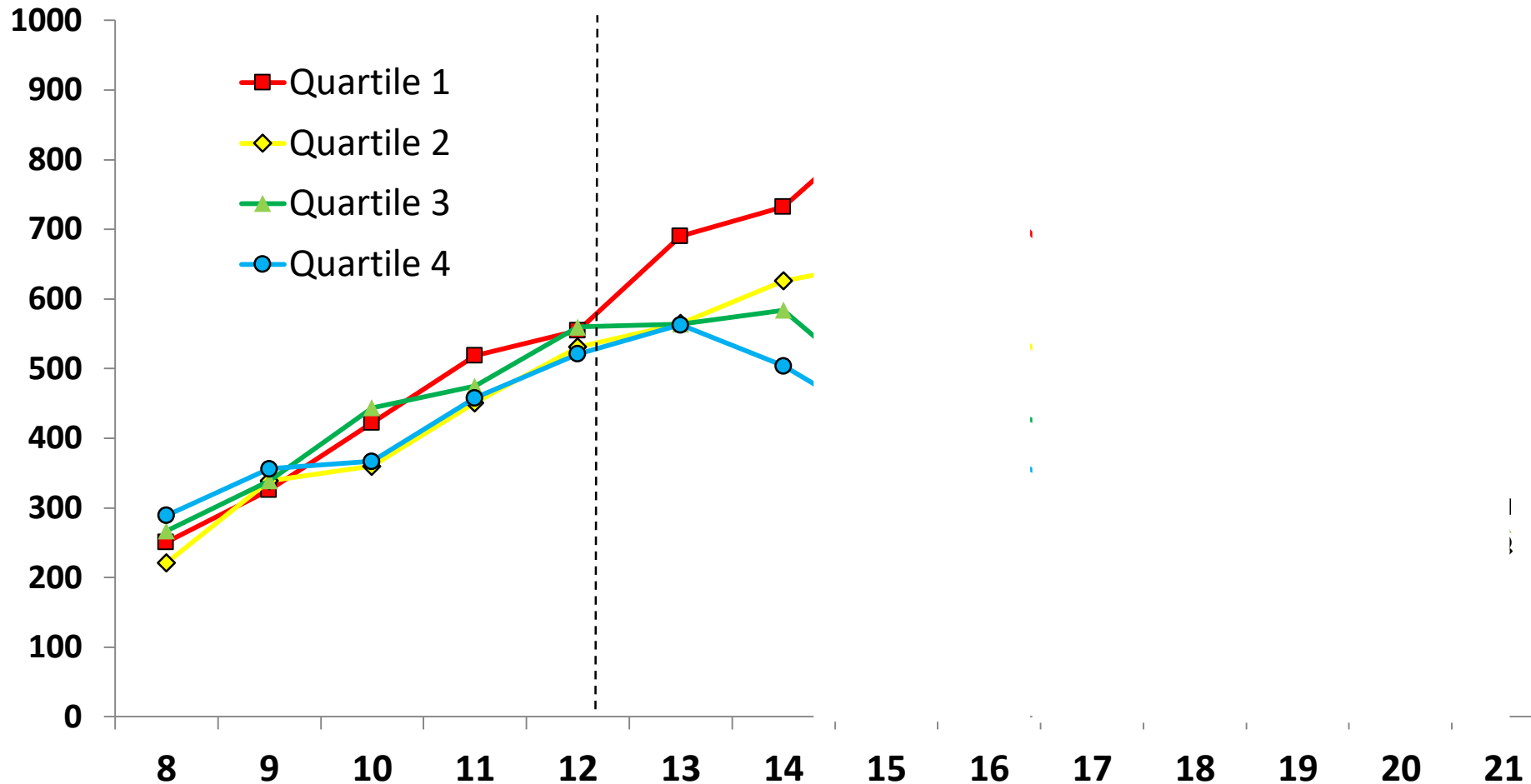


# The Relative Age Effect: RL Participation

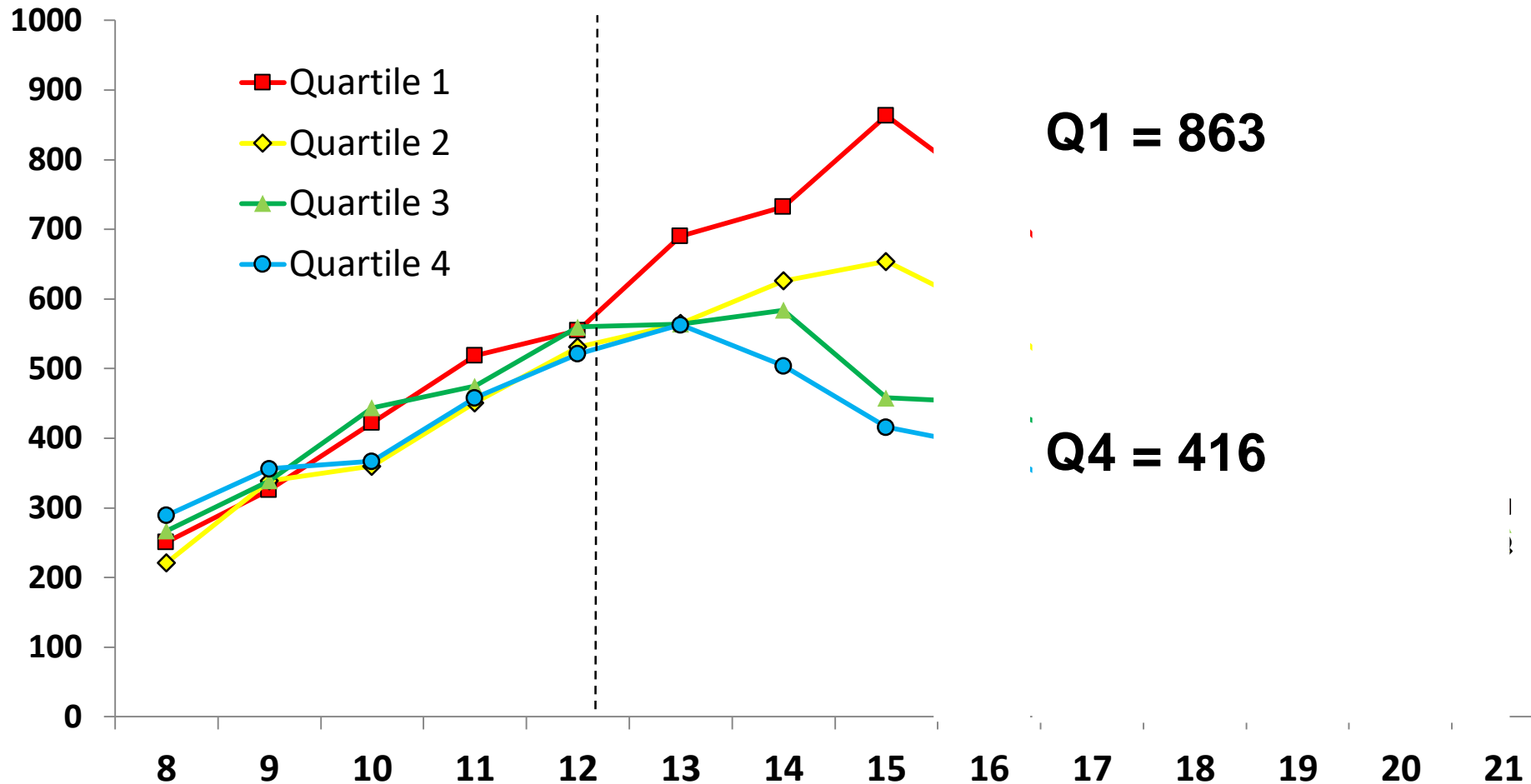




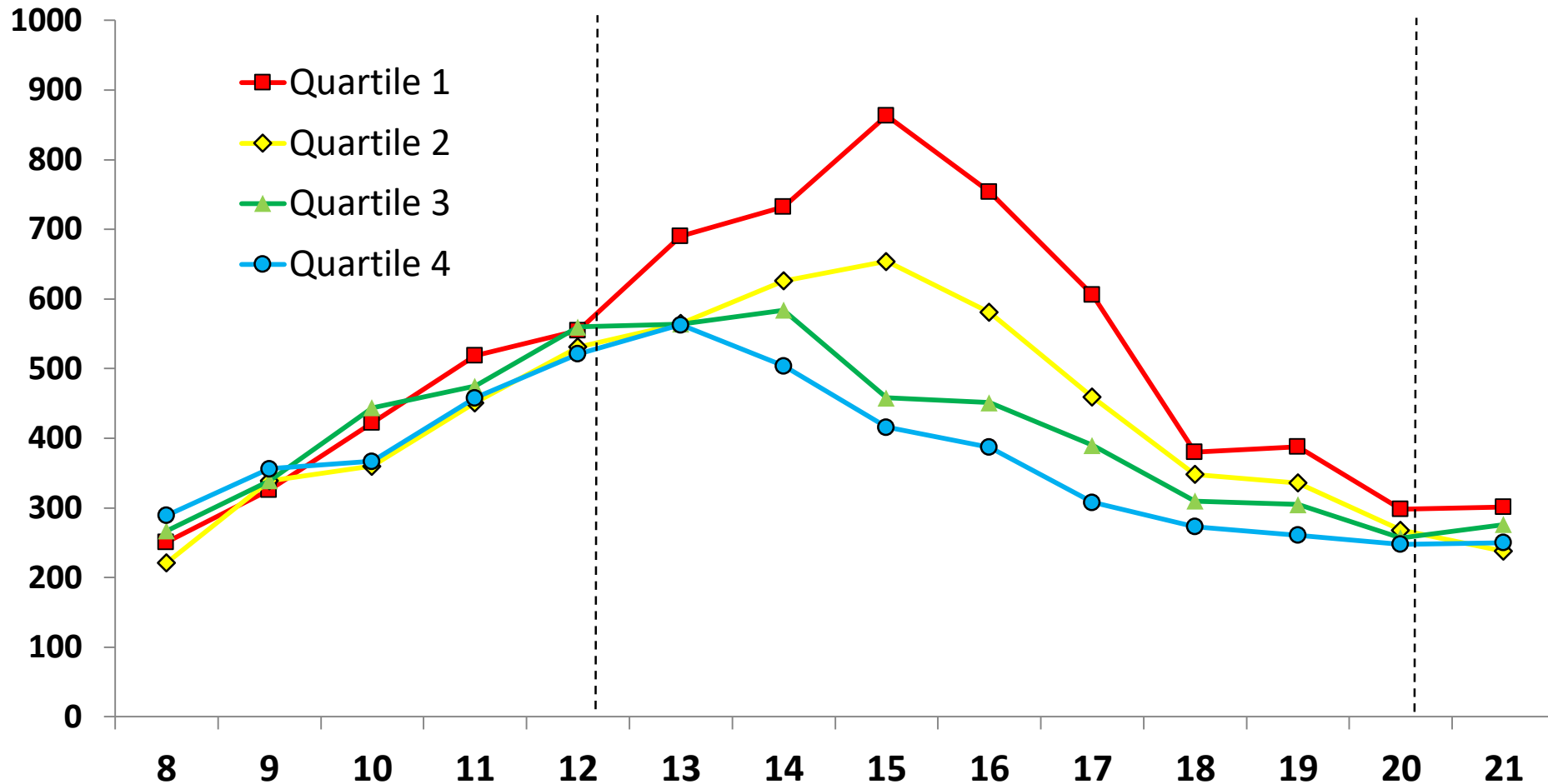
# The Relative Age Effect: RL Participation



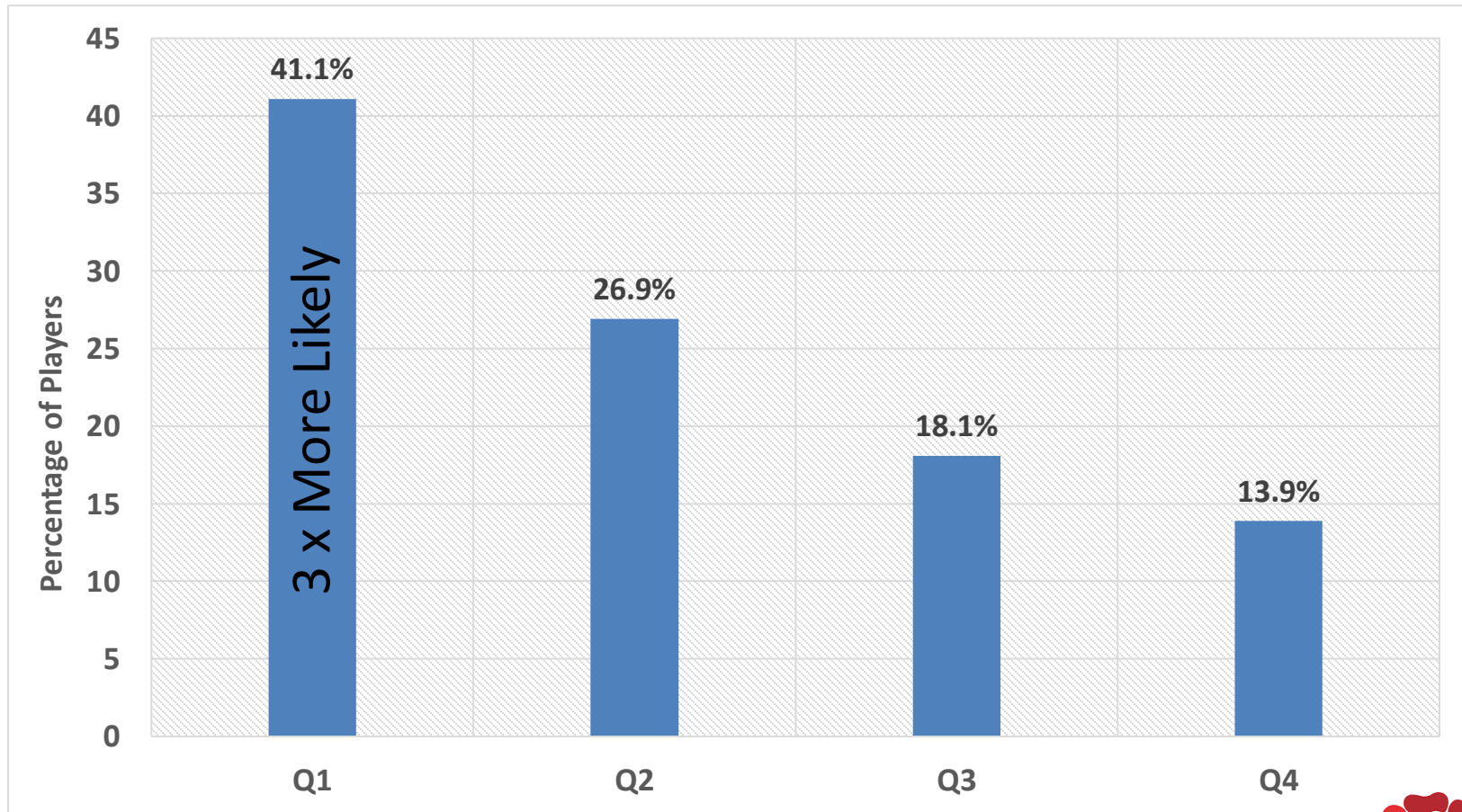
# The Relative Age Effect: RL Participation



# The Relative Age Effect: RL Participation



# The Relative Age Effect: RFU Academies (U15-U18)



# The Relative Age Effect – Females

Table 1. Chi-square analyses and birth quartile frequencies: Whole sample.

Data set	Chi-square	Effect size	Q1 n (%)	Q2 n (%)	Q3 n (%)	Q4 n (%)	Sample size
2006 WC	$\chi^2(3) = 2.47, p > .05$	$w = .09$	57 (22.2)	58 (22.6)	72 (28)	70 (27.2)	257
**2010 WC	$\chi^2(3) = 1.46, p > .05$	$w = .07$	58 (24.1)	66 (27.4)	54 (22.4)	63 (26.1)	241
2006/2010 WC	$\chi^2(3) = 0.98, p > .05$	$w = .04$	115 (23.1)	124 (24.9)	126 (25.3)	133 (26.7)	498
Canadian Developmental	$\chi^2(3) = 17.36, p < .05^*$	$w = .10$	406 (27.1)	383 (25.6)	399 (26.7)	309 (20.6)	1,497
New Zealand Developmental	$\chi^2(3) = 7.86, p < .05^*$	$w = .02$	3,450 (24.8)	3,476 (25)	3,602 (25.9)	3,371 (24.3)	13,899

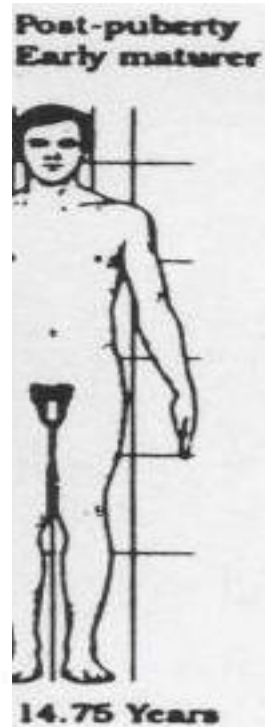
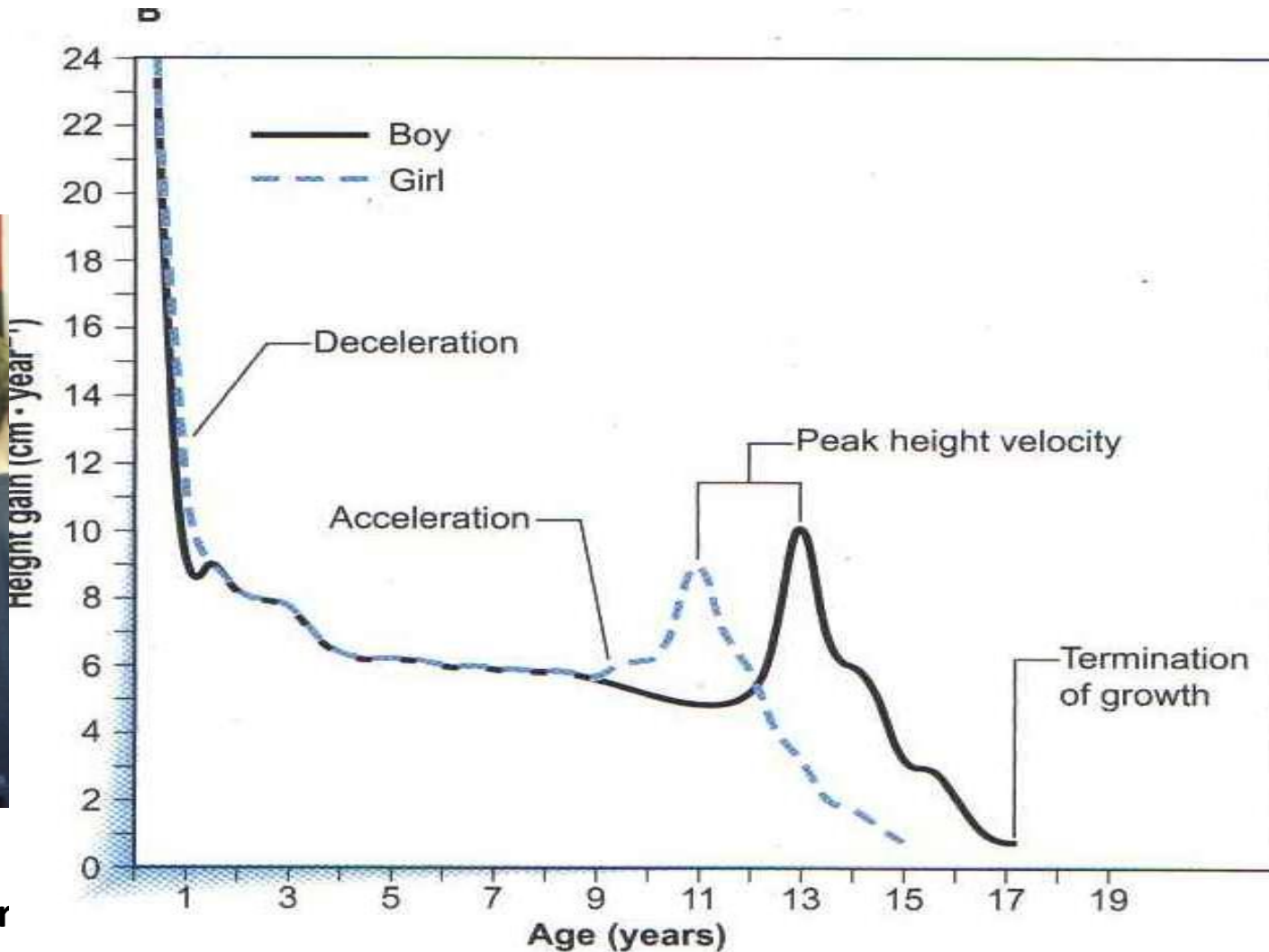
Table 2. New Zealand developmental players.

Age	Chi-square	Effect size	Q1 n (%)	Q2 n (%)	Q3 n (%)	Q4 n (%)	Sample size
Overall	$\chi^2(3) = 7.86, p < .05^*$	$w = .02$	3,450 (24.8)	3,476 (25)	3,602 (25.9)	3,371 (24.3)	13,899
4	$\chi^2(3) = 35.22, p < .05^*$	$w = .35^{\#}$	107 (38.5)	73 (26.2)	55 (19.8)	43 (15.5)	278
5	$\chi^2(3) = 6.39, p > .05$	$w = .11$	152 (29.3)	126 (24.3)	125 (24.1)	116 (22.3)	519
6	$\chi^2(3) = 12.33, p < .05^*$	$w = .12$	232 (29.4)	200 (25.3)	168 (21.3)	189 (24)	789
7	$\chi^2(3) = 11.34, p < .05^*$	$w = .10$	305 (28.3)	283 (26.2)	251 (23.2)	241 (22.3)	1,080
8	$\chi^2(3) = 10.26, p < .05^*$	$w = .08$	350 (26.5)	360 (27.2)	291 (22)	321 (24.3)	1,322
9	$\chi^2(3) = 41.40, p < .05^*$	$w = .14$	559 (30)	469 (25.2)	464 (24.9)	372 (19.9)	1,864
10	$\chi^2(3) = 64.54, p < .05^*$	$w = .17$	352 (17.4)	513 (25.3)	600 (29.7)	558 (27.6)	2,023
11	$\chi^2(3) = 46.39, p < .05^*$	$w = .18$	425 (32.8)	290 (22.4)	297 (23)	282 (21.8)	1,294
12	$\chi^2(3) = 62.74, p < .05^*$	$w = .23$	170 (15.1)	286 (25.5)	353 (31.4)	315 (28)	1,124
13	$\chi^2(3) = 3.92, p > .05$	$w = .07$	135 (21.5)	159 (25.4)	172 (27.4)	161 (25.7)	627
14	$\chi^2(3) = 2.38, p > .05$	$w = .06$	168 (27)	153 (24.6)	157 (25.2)	144 (23.2)	622
15	$\chi^2(3) = 1.47, p > .05$	$w = .04$	172 (24.2)	176 (24.8)	192 (27)	170 (24)	710
16	$\chi^2(3) = 5.50, p > .05$	$w = .08$	148 (21)	189 (26.8)	180 (25.6)	187 (26.6)	704
17	$\chi^2(3) = 54.36, p < .05^*$	$w = .32^{\#}$	66 (13.1)	109 (21.6)	177 (35.1)	152 (30.2)	504
18	$\chi^2(3) = 3.37, p > .05$	$w = .13$	41 (21.9)	40 (21.4)	50 (26.7)	56 (30)	187
19	$\chi^2(3) = 1.40, p > .05$	$w = .10$	35 (25.5)	29 (21.2)	39 (28.5)	34 (24.8)	137
20	$\chi^2(3) = 2.96, p > .05$	$w = .16$	33 (28.7)	21 (18.2)	31 (27)	30 (26.1)	115

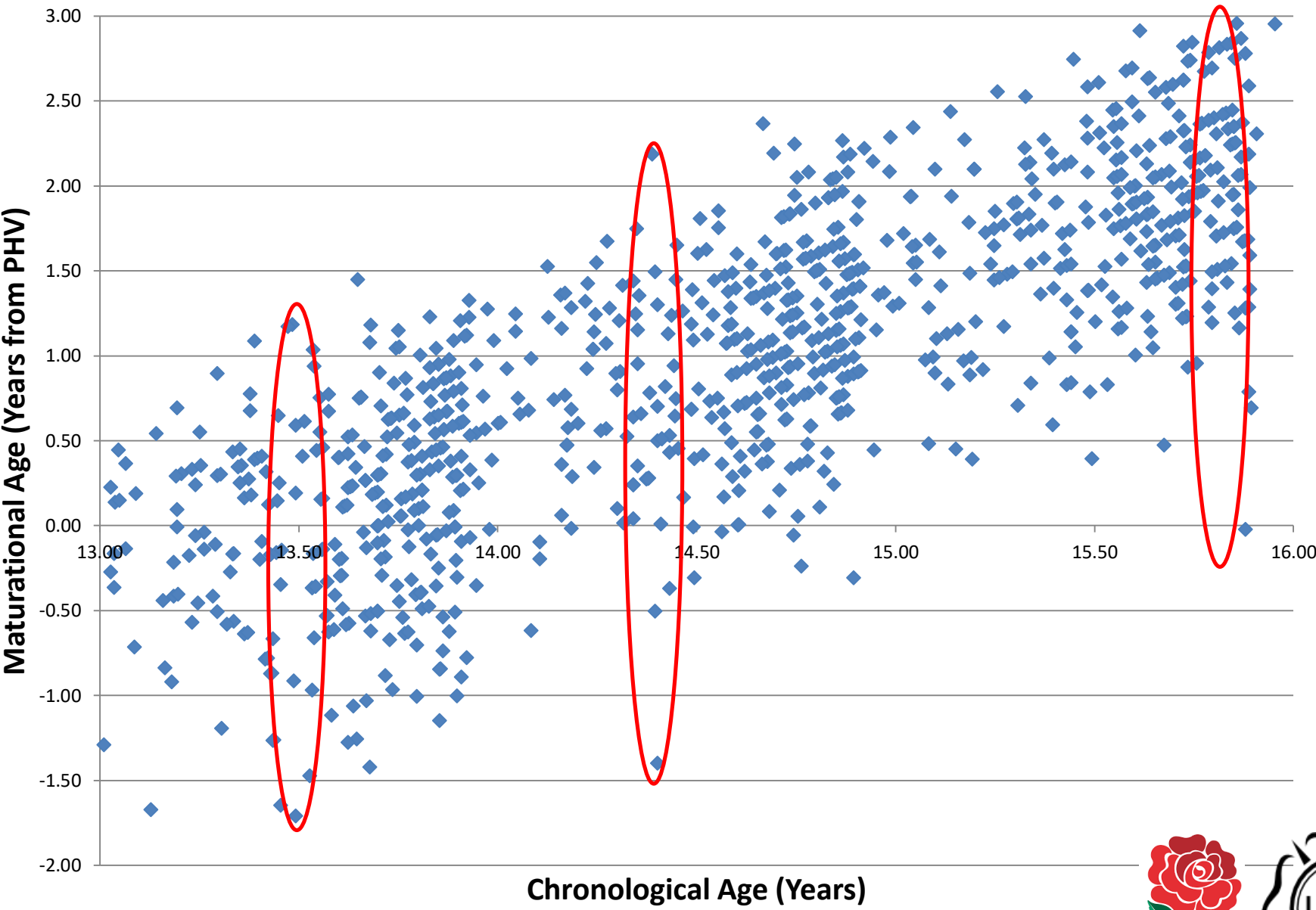
\* Statistical significance.

# Moderate-to-large practical significance.

# Maturation



# Scatter Plot of Chronological vs. Maturational Age



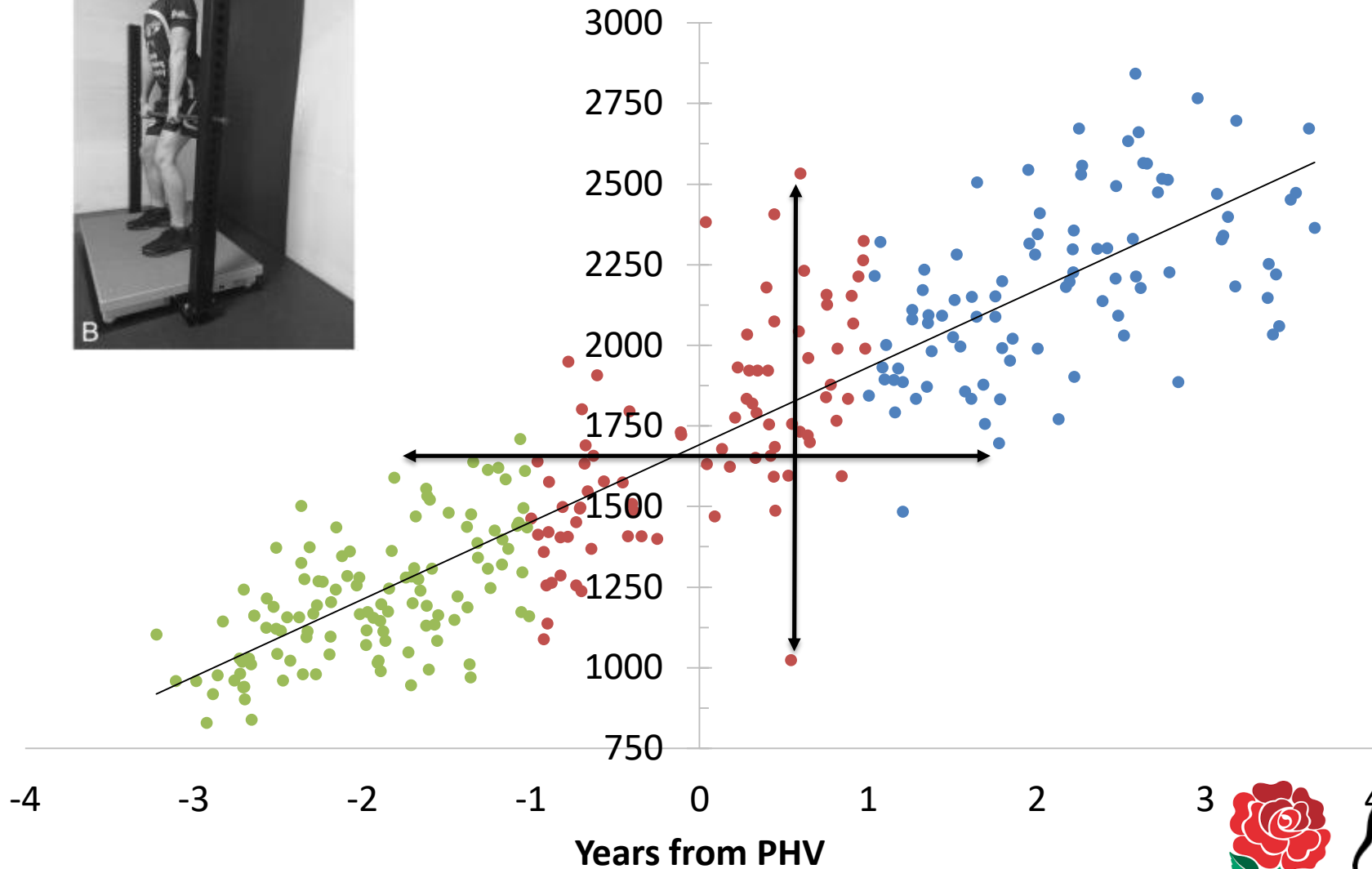
# Size & Maturation Biases in RU

14-16 years old in One RU Academy

- Mass between 90<sup>th</sup> & 97<sup>th</sup> percentile
- Height between 75<sup>th</sup> & 90<sup>th</sup> Percentile
- 7 Early Maturers
- 44 On Time Maturers
- 0 Late Maturers



# Maturation & Physical Performance



# What does this mean for Rugby?

Chronological Annual Age  
Grouping

+

Individual variation in  
biological maturity

+

Relationship between  
maturation and performance

Children and  
adolescents may be  
(dis)advantaged  
within Talent ID in  
Youth Rugby



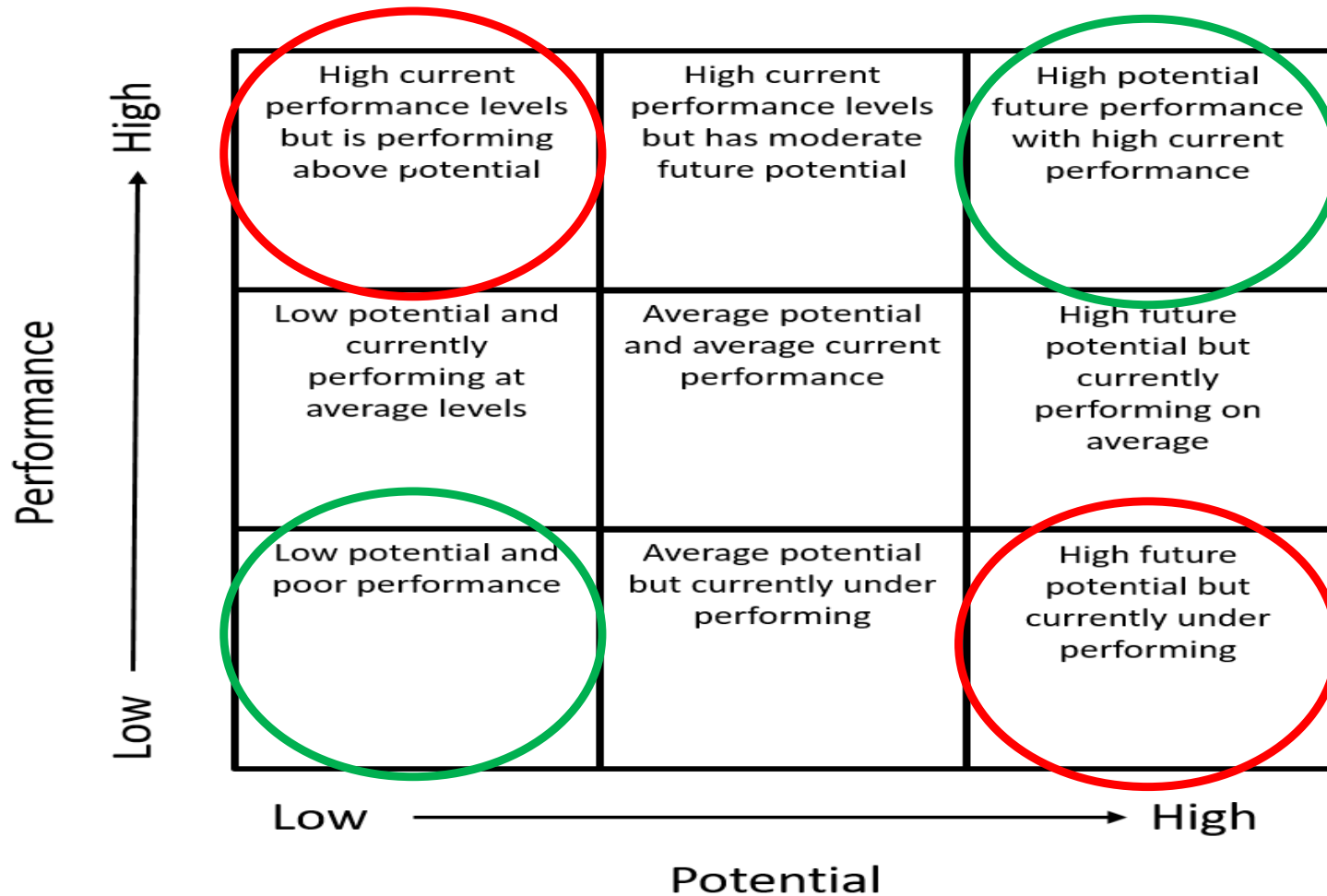
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# Assumptions



# Performance vs. Potential



**How does relative age & maturity status (and training age) influence decisions on performance and potential?**

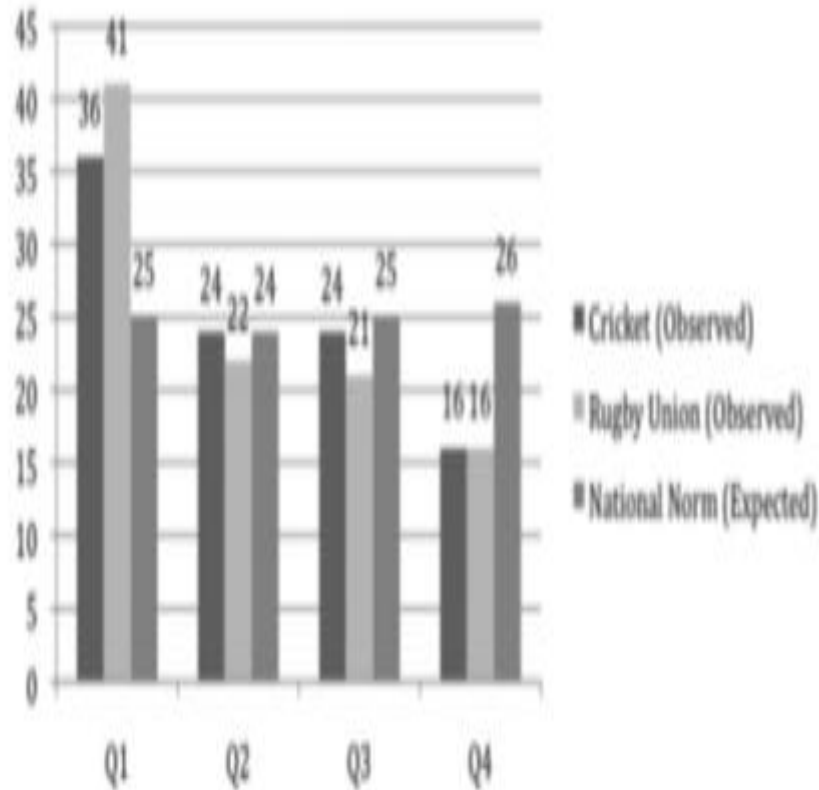


**Do advanced age and  
maturation influence  
future career attainment  
in rugby?**

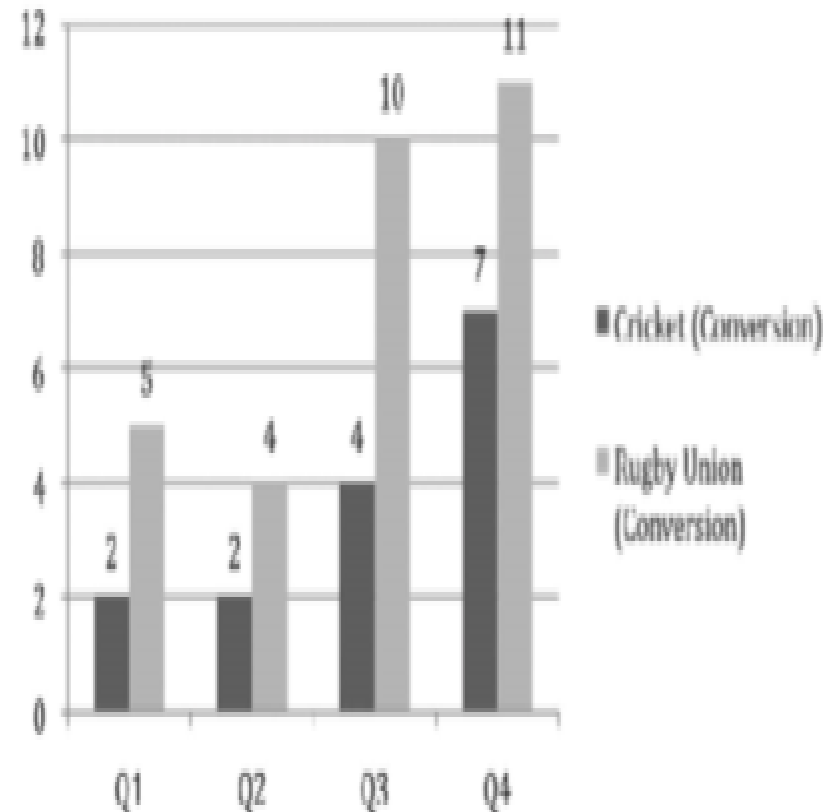


# It appears to support the younger and later maturing player

## Initial Talent Identification



## Conversion of Talent



# It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276		
Q2	141		
Q3	109		
Q4	54		

# It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276	155 (56%)	
Q2	141	85 (60%)	
Q3	109	51 (47%)	
Q4	54	40 (74%)	



# It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276	155 (56%)	32 (12%)
Q2	141	85 (60%)	12 (9%)
Q3	109	51 (47%)	10 (9%)
Q4	54	40 (74%)	14 (26%)

# It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145		
Pivots	107		
Props	91		
Backrow	138		

# It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145	84 (58%)	
Pivots	107	73 (68%)	
Props	91	45 (49%)	
Backrow	138	85 (62%)	

# It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145	84 (58%)	16 (11%)
Pivots	107	73 (68%)	26 (24%)
Props	91	45 (49%)	5 (5%)
Backrow	138	85 (62%)	16 (12%)

# Identifying & Developing Talent of the Future...

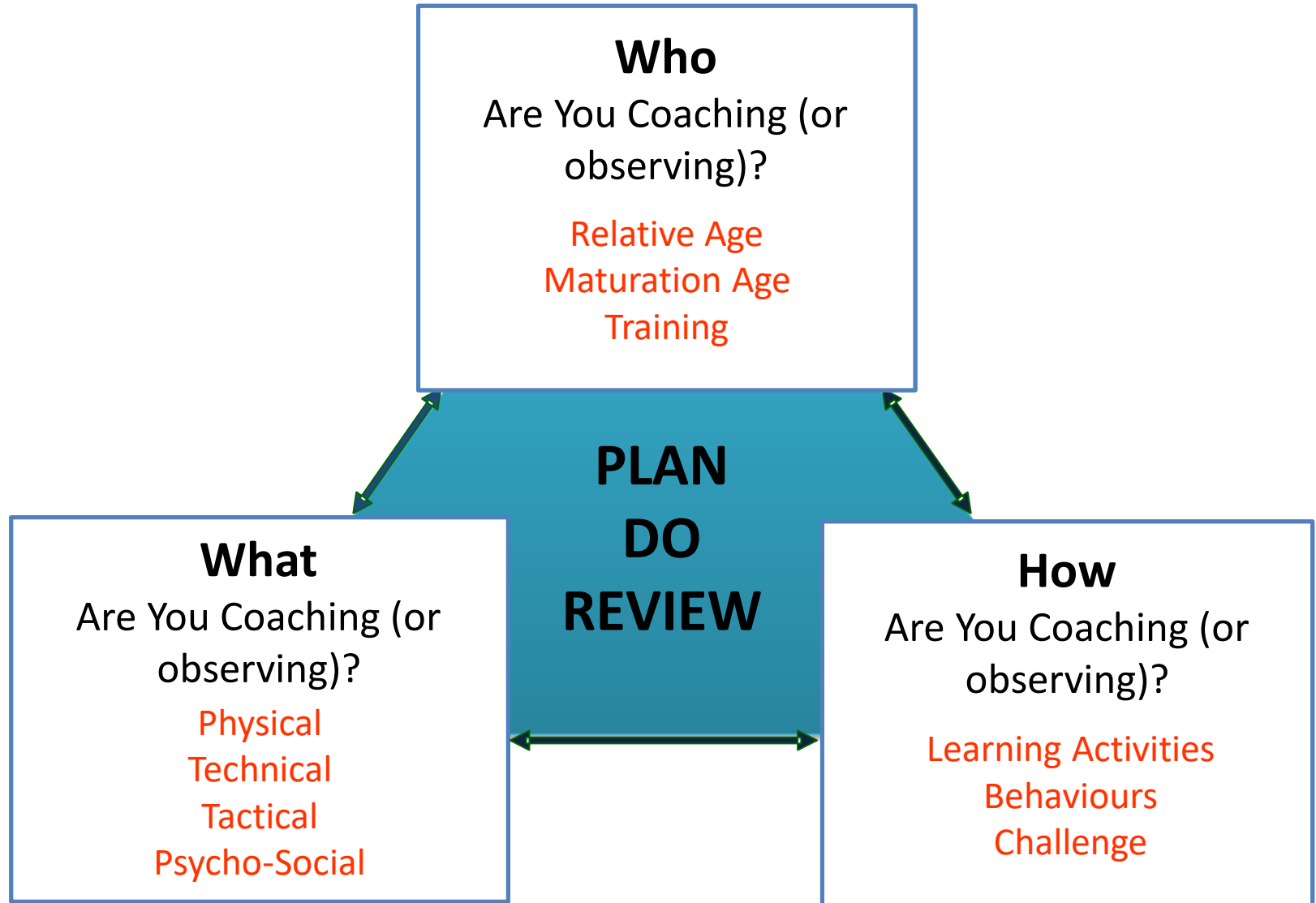
The background of the slide features a row of stylized, 3D human figures. Most are light gray, but one figure in the center is a vibrant red. A large, semi-transparent magnifying glass is positioned over the red figure, focusing attention on it. The figures are simple, without facial features, and are standing in a line.

In groups, discuss strategies or interventions you could apply for identifying and/or developing players in your context

# So, what can I do about it?

IDENTIFICATION	DEVELOPMENT

# So, what can I do about it?





*A Short Story  
about... Little  
Jonny*





# MONDAY

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*School*

*training, big*

*match*

*Wednesday*

TUESDAY



*Academy  
training,  
can't miss  
that!...*

WEDNESDAY

*Game day.....*

*54-0 win!!!*

*5 tries*



# THURSDAY



*Weights,  
don't want  
to get left  
behind*

# FRIDAY

---



*Training, big  
game tomorrow,  
only light though  
- no contact*

# SATURDAY



*Game day.....*

*68-5 win!!!*

*6 tries*

# SUNDAY

---

*Weights, don't  
want to get  
left behind...*





Little Jonny **didn't make it.**  
He was the quartile one, early  
maturing **big kid** in school. He  
**played too much** and **didn't**  
**develop** the required **skills** or  
**psycho-social skills** when  
everyone caught him up  
physically. Little Jonny stopped  
playing rugby

His **Team(s) Won** but  
**Little Jonny Lost**

**To be continued.....**



# Take Home Messages

- Player Performance and Potential is influenced by **Relative, Maturational, Cognitive and Training AGE**
- Advanced age MAY be an indicator of **CURRENT PERFORMANCE** but MAY NOT be an indicator of **FUTURE POTENTIAL**
- Knowing the **WHO** will help you understand the **WHAT** and adapt the **HOW** in your coaching practice
- Remember **LITTLE JONNY**, its not always about the late maturing players – **SUPPORT & CHALLENGE EVERYONE!**



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# Thank You for listening!

## Assessing and Evaluating Player Performance & Potential: The Influence of Age

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